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PROJECT BOOKLET

MAT2038 Applied Mathematics 20
Module 6

FOR STUDENT USE ONLY

Date Assignment Submitted:

Time Spent on Assignment:

(If label is missing or incorrect)

Student File Number:

Module Number: _____

FOR OFFICE USE ONLY

Assigned

Teacher: _____

Assignment

Grading: _____

Graded by: _____

Date Assignment Received:

Student's Questions and Comments

Apply Module Label Here

Name

Address

Postal Code

Please verify that preprinted label is for
correct course and module.

Teacher's Comments

Teacher

INSTRUCTIONS FOR SUBMITTING THIS DISTANCE LEARNING PROJECT BOOKLET

When you are registered for certain distance learning courses, you are expected to submit completed projects for correction. Try to submit each project as soon as you complete it. Do not submit more than one Project Booklet in one subject at the same time. Before submitting your Project Booklet, please check the following:

- Is the project completed? If not, explain why.
- Has your work been reread to ensure accuracy in spelling and details?
- Is the booklet cover filled out and the correct module label attached?

MAILING

1. Postage Regulations

Do **not** enclose letters with your project or Project Booklets.

Send all letters in a separate envelope.

2. Postage Rates

Put your project or Project Booklet in an envelope and take it to the post office and have it weighed. Attach sufficient postage and seal the envelope. Project Booklets will travel faster if sufficient postage is used and if they are in large envelopes that do not exceed two centimetres in thickness.

FAXING

1. Project Booklets may be faxed to the school with which you are registered. Contact your teacher for the appropriate fax number.
2. All faxing costs are the responsibility of the sender.

E-MAILING

It may be possible to e-mail your completed project to the school with which you are registered. Contact your teacher for the appropriate e-mail address.

Applied

Module

6

Mathematics 20

CIRCLES

PROJECT BOOKLET



Learning
Technologies
Branch

Alberta
LEARNING

FOR TEACHER'S USE ONLY

Summary

Total Possible Marks	Your Mark
40	

Teacher's Comments

Applied Mathematics 20
Module 6: Circles
Project Booklet
Learning Technologies Branch
ISBN 0-7741-1949-7

Title page: PhotoDisc, Inc.

This document is intended for	
Students	✓
Teachers	✓
Administrators	
Home Instructors	
General Public	
Other	



You may find the following Internet sites useful:

- Alberta Learning, <http://www.learning.gov.ab.ca>
- Learning Technologies Branch, <http://www.learning.gov.ab.ca/ltb>
- Learning Resources Centre, <http://www.lrc.learning.gov.ab.ca>

The use of the Internet is optional. Exploring the electronic information superhighway can be educational and entertaining. However, be aware that these computer networks are not censored. Students may unintentionally or purposely find articles on the Internet that may be offensive or inappropriate. As well, the sources of information are not always cited and the content may not be accurate. Therefore, students may wish to confirm facts with a second source.

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PROJECT BOOKLET

APPLIED MATHEMATICS 20: MODULE 6

Your mark for this module will be determined by how well you do on the module project in this Project Booklet and the module assignment in the Assignment Booklet.

The value of each part of the module project is stated in the left margin of this booklet. The total value of the module project is 40 marks.

Read all parts of this project carefully and record your answers in the appropriate place. Work slowly and carefully. If you are having difficulties, go back and review the appropriate activity in the Student Module Booklet.

Be sure to complete all parts of the project and proofread your responses before submitting this project to your teacher. If you require more room for any response, use your own paper and attach it securely to this booklet.

40

Module Project: Circle Design

There are three major parts to this project: the artwork for the design, a copy of the design with the important mathematical features indicated, and a short report on the form of artwork you chose. You should include a bibliography in your report—citing websites, books, magazine articles, and examples of work you found during your research.

The project will be graded in four areas, each worth 5 marks.

Originality	5 marks
Artistic use of the media	5 marks
Use of circle properties	5 marks
Quality of the report	5 marks
TOTAL	20 marks

The mark you receive out of 20 will be multiplied by 2 to make the project out of a total of 40 marks.

Submit your circle design to your teacher. Make sure that you have included the necessary parts of the project:

- the work of art
- a copy of the work of art with the circle properties clearly marked on it
- a written report on the history of your chosen media, including the research sources you have used

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ASSIGNMENT BOOKLET

MAT2038 Applied Mathematics 20
Module 6

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Time Spent on Assignment:

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Assigned

Teacher: _____

Assignment

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**Student's Questions
and Comments**

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Postal Code

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correct course and module.*

Teacher's Comments

Teacher

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When you are registered for distance learning courses, you are expected to regularly submit completed assignments for correction. Try to submit each section of assignments as soon as you complete it. Do not submit more than one Assignment Booklet in one subject at the same time. Before submitting your section assignments or your Assignment Booklet, please check the following:

- Are all the assignments completed? If not, explain why.
- Has your work been reread to ensure accuracy in spelling and details?
- Is the booklet cover filled out and the correct module label attached?

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Applied

Module

6

Mathematics 20

CIRCLES

ASSIGNMENT BOOKLET



Learning
Technologies
Branch

Alberta
LEARNING

FOR TEACHER'S USE ONLY

Summary

Total Possible Marks	Your Mark
60	

Teacher's Comments

Applied Mathematics 20
Module 6: Circles
Assignment Booklet
Learning Technologies Branch
ISBN 0-7741-1948-9

Title page: PhotoDisc, Inc.

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ASSIGNMENT BOOKLET

APPLIED MATHEMATICS 20: MODULE 6

Your mark for this module will be determined by how well you do on the assignment in this Assignment Booklet and the module project in the Project Booklet.

The value of each part of the module assignment is stated in the left margin of this booklet. The total value of the module assignment is 60 marks.

Read all parts of this booklet carefully and record your answers in the appropriate place. Work slowly and carefully. If you are having difficulties, go back and review the appropriate activity in the Student Module Booklet.

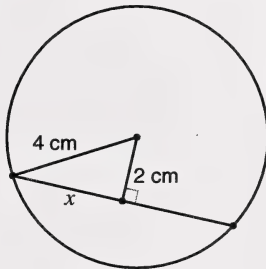
Be sure to complete all parts of the assignment and proofread your responses before you submit this assignment to your teacher for grading.

60

Module Assignment

1. Find the value of x in each of the following diagrams. Round your answers to 2 decimal places.

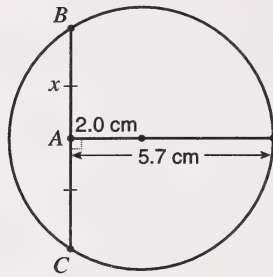
a.



2

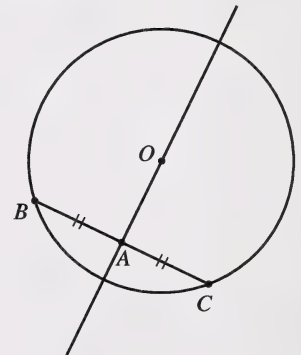
3

b.



3

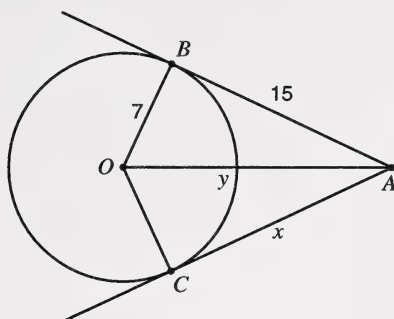
2. Are the two lines in the diagram given guaranteed to be perpendicular? Explain your answer.



3. Find the value of x and y in each of the following diagrams. Round your answers to 2 decimal places if necessary.

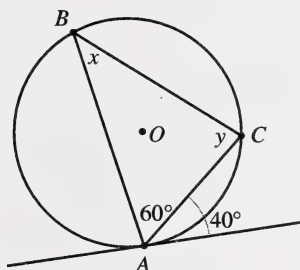
3

a.



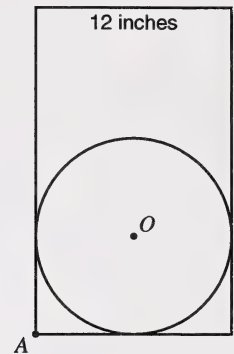
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b.



5

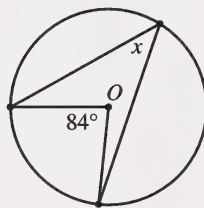
4. A round, 12-inch woofer is mounted to the bottom of a rectangular speaker enclosure with an inner width measurement of 12 inches (as shown in the diagram on the right). How far from corner A is the centre, O , of the woofer? Complete the diagram with the required measurements and appropriate labels in addition to the calculations. Round your answer to 2 decimal places.



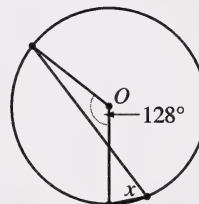
2

5. Find the value of x in each of these diagrams.

a.



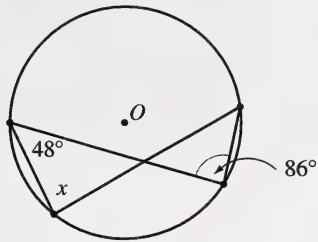
b.



6. Find the value of x in each of the following. State the property you used to find your answer.

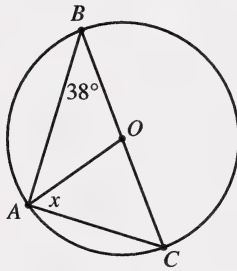
a.

2



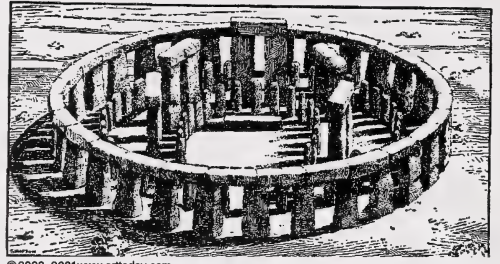
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b.



6

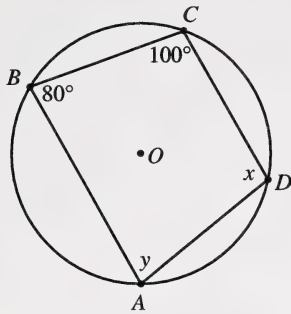
7. The illustration on the right shows a representation of Stonehenge as it would have appeared some 3500 years ago. The outer circle consisted of 30 stones, each standing 4 m tall, 2 m wide, and 1 m thick. If the circle containing this regular polygon was 33 m in diameter, approximately how far apart were the outer stones? Provide an explanation of how you determined your answer, and round your answer to 2 decimal places.



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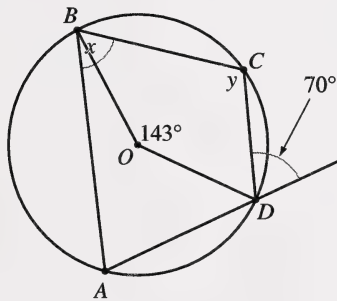
2

8. Find the values of x and y in the following diagram.



5

9. Find the values of x and y . State all of the properties you used to find your answer.



⑤

10. The sum of the interior angles of a polygon lies between 8900° and 9100° . How many sides does the polygon have?

⑥

- 11.** What is the smallest number of satellites that would be able to rebroadcast a signal from a single station on Earth so that every part of the equator could receive the signal? Provide an explanation as well as any necessary diagrams. (Assume that Earth is a perfect sphere when answering this question.) **Note:** The farther the satellite is from Earth, the more of Earth's surface is accessible.

④

- 12.** Use a compass and ruler to draw a circle with a diameter of 7 cm and a point, P , 10 cm from the centre of this circle. Complete the diagram by adding the two tangents to the circle from the point P . (Label the points of tangency A and B .) Provide sufficient additional information to determine the lengths of PA and PB . **Note:** You are not required to calculate the lengths of PA and PB .

⑥

13. Mark and describe all of the circle properties you can find in the following diagram.

